

foxhounds, as it were, in Lepidoptera; they course by scent, as, undoubtedly, butterflies and many Geometers find their mates by sight.

It has been suggested that these insects possess an "additional sense," and that its seat is, probably, the "feathered antennæ." But assembling is evidently habitual in species without these very antennæ (Entom. xxv. 84, 121, 163, 218). It is much more likely that pectinated antennæ are necessary under special circumstances affecting the sense of touch. There is no evidence in favour of an additional sense existing; there is no organ we can point to for its exercise; there is, in short, no need for it.

These remarks are laid before the reader without any claim to infallibility. There are puzzles insoluble throughout Nature; so will there be in insect mechanism. But a generous field has been left for useful research, and it is well we should seek to know more about the things around us than that they are possible results of chance.

Chester, October 31st, 1894.

A NEW CLASSIFICATION OF THE GENUS *PERGA*, LEACH.

BY JOHN W. SHIPP.

In a paper published in the 'Entomologist' (vol. xxvi. p. 263), I gave a list of specimens belonging to the above genus, which are in the Hope Collection at Oxford. Kirby (List Hym. i. 1882) gives a list of species in the British Museum, including no less than forty-six known forms. This has been further augmented to fifty-one, the species since added being *chalybea*, Froggatt; *sericea*, Kirb.; *sellata*, Kirb.; *lalage*, Kirb.; and *divariata*, Kirb. The most natural classification of the genus is as follows:—

I. Antennæ 6-jointed.

- i. Antennæ shortish, longer than head, joints 3-5 of equal length, not remarkably short.

- A. Species furnished with four submarginal cells in anterior wings.

- a. Species with the 2nd recurrent nervure confluent with the radial nervure between the 2nd and 3rd submarginal cells . . .

ACANTHOPERGA, n. g.

- b. Second recurrent nervure not confluent, but joining the cubital nervure between the 2nd and 3rd cubital transverse nervures . . .

PERGA, Leach.

B. Species furnished with three submarginal cells in anterior wings

PSEUDOPERGA, Guérin.

ii. Antennæ very short, hardly, if at all, extending past eyes; joints 3-5 so short that the club appears to spring almost immediately from the antennal tubercle; hind femora more or less swollen.

A. Species having three submarginal cells in anterior wings, at least in the males

PERGADOPSIS, n. g.

B. Species having four submarginal cells in anterior wings

CAMPTOPERGA, n. g.

II. Antennæ seven-jointed, with a gradually formed club.

i. Species having three submarginal cells in fore wings

PLAGIOPERGA, n. g.

ii. Species having four submarginal cells in fore wings

XYLOPERGA, n. g.

ACANTHOPERGA, mihi.

cameroni (type). Westwood, P. Z. S., 1880, p. 367, pl. xxxvii. fig. 3; Kirby, List Hym. i. p. 24, 1882; Shipp, Ent. xxvi. p. 265, 1893.

Hab. Australia.

PERGA, Leach.

Zool. Misc. iii. p. 115, 1817.

dorsalis (type). Leach, Zool. Misc. iii. p. 117, n. 4, pl. cxlviii. f. 1; Westw., P. Z. S., 1880, p. 362; Kirby, List Hym. i. p. 18, pl. i. figs. 11, 12; Froggatt (larv), P. Linn. Soc., N.S.W. (2) v. p. 284; Shipp, Ent. xxvi. p. 265.

scutellata ♀, Westw., Griff. An. Kingd. xv. p. 402, pl. lxvi. f. 2, 1832; Brullé, Hist. Nat. Ins. Hym. iv. pl. 48, f. 1, p. 674; Guérin (del), Icon. du Règne Anim. Ins. pl. 64, f. 2.

eucalypti, Bennett and Scott, P. Z. S., 1859, p. 209, pl. 62; Kirby, List Hym. i. p. 20.

Hab. Australia; New S. Wales; Queensland; Tasmania.

PSEUDOPERGA, Guérin.

Icon. du Règne Anim. Ins., teste, p. 395.

lewisii (type), Westw., T. E. S. i. p. 232, 1836; Arc. Ent. i. p. 23, pl. vii. f. i., 1841; P. Z. S., 1880, p. 374. Kirby, List Hym. i. p. 24, 1882; Froggatt (larv), P. Linn. Soc., N.S.W. (2), v. p. 287; Shipp, Ent. xxvi. p. 264.

Hab. South Australia; Tasmania; Adelaide.

smithii, Westw., P. Z. S., 1880, p. 375, pl. xxxvi. f. 6; Kirby, List Hym. i. p. 24; Shipp, Ent. xxvi. p. 264.

Hab. Australia.

PERGADOPSIS, mihi.

dahlbomii (type), Westw., P. Z. S., 1880, p. 371, pl. xxxv. figs. 3, 4; Kirby, List Hym. i. p. 28; Shipp, Ent. xxvi. p. 266.

Hab. Australia.

guerinii, West., P. Z. S., 1880, p. 367, pl. xxxv. f. 1; Shipp, Ent. xxvi. p. 265.

Hab. Australia.

CAMPTOPERGA, mihi.

ressoni (type), Westw., P. Z. S., 1880, p. 368, pl. xxxvii. f. 1; Shipp, Ent. xxvi. p. 265.

Hab. Swan River, West Australia.

PLAGIOPERGA, mihi.

mayrii (type), Westw., P. Z. S., 1880, p. 378, pl. xxxvii. f. 7; Shipp, Ent. xxvi. p. 266.

Hab. Swan River, West Australia.

jurinei, Westw., P. Z. S., 1880, p. 378, pl. xxxvii. f. 6; Kirby, List Hym. i. p. 29; Shipp, Ent. xxvi. p. 266.

Hab. Swan River, Melbourne.

XYLOPERGA, mihi.

hullidayi (type), Westw., P. Z. S., 1880, p. 377, pl. xxxvii. f. 5; Kirby, List Hym. i. p. 30; Shipp, Ent. xxvi. p. 266.

Hab. Australia, Adelaide.

P. schiodti, Westw., is referred to *latrcillei*, Westw. (Froggatt, l. c., p. 287), and the larva described.

He also describes a new species, *P. chalybea*, Frogg. (p. 285), from South Australia, together with the larvæ. In the same paper are notes upon the habits and descriptions of larvæ of *færsteri*, Westw. (p. 288), *lewisii*, Westw. (p. 287), and *polita*, Westw. (p. 285).

In the Ann. Mag. Nat. Hist. (6), vol. xii., 1893, p. 38, Kirby describes the following species from Melbourne:—

P. divaricata (p. 39), probably, owing to its short antennæ and three submarginal cells, referable to *Pergadopsis*, mihi; *sericea* (p. 40), probably a *Pseudoperga*, Guér.; *sellata* (p. 40), a true *Perga*, and (*Xyloperga*) *lalage* (p. 41).

ON *PARNASSIUS PHÆBUS* (FAB.) = *DELIUS* (ESP.), AND
P. SMINTHEUS (DOUBLEDAY).

BY JOHN WATSON.

Parnassius smintheus (Doub.) is found only in the Rocky Mountains of Utah, Colorado, and Nevada, whilst *P. phæbus*, of which *smintheus* is considered a form, is found in Europe and